What is claimed is:

1. A method of lithography simulation comprising:

dividing a surface of a substrate onto which light that is focused at an aperture angle by a projection lens is shone into a first region onto which all of the light strikes and a second region onto which a portion of the light strikes;

calculating an intensity of the light shone onto the first region; and

calculating an intensity of the light shone onto the second region.

2. The method of lithography simulation of claim 1, wherein the second region is a region where the remaining portion of the light is blocked by a step-like part on said surface having a slope angle smaller than said aperture angle.

3. The method of lithography simulation of claim 2, wherein when a mask pattern that is perpendicular to the step-like part is transferred to the substrate, the intensity of the light shone onto the second region is calculated based on the ratio of the surface area of the shape of the light source of the projection lens as viewed from the second region to the surface area of the shape of said light source as viewed from the first region.

4. The method of lithography simulation of claim 2, wherein calculating the intensity of the light shone onto the second region is carried out based on an eclipsed shape of an exit pupil of said projection lens blocked by the step-like part.

5. The method of lithography simulation of claim 3, wherein the ratio of the surface area of the light source shape as viewed from the second region to the surface area of the light source shape as viewed from the first region is determined by the height of the step-like part and the distance from a vertical line dropped from the apex of the step-like part.

6. The method of lithography simulation of claim 1, wherein when a substance that transmits the light is disposed on the substrate, the aperture angle is set using Snell's law and the refractive index of the substance.

7. A method of mask pattern correction comprising:

dividing a surface of a substrate onto which light that is focused at an aperture angle by a projection lens is shone into a first region onto which all of the light strikes and a second region onto which a portion of the light strikes;

calculating an intensity of the light shone onto the first region;

calculating an intensity of the light shone onto the second region;

calculating an exposure pattern to be transferred to the substrate using a mask pattern based on the intensities of the light shone onto the first and second regions; and

correcting the shape of mask pattern in such a manner as to reduce the amount of deviation of the exposure pattern from a desired design pattern.

8. The method of mask pattern correction of claim 7, wherein the second region is a region where the remaining portion of the light is blocked by a step-like part on said surface having a slope angle smaller than said aperture angle.

9. The method of mask pattern correction of claim 8, wherein when a mask pattern that is perpendicular to the step-like part is transferred to the substrate, the intensity of the light shone onto the second region is calculated based on the ratio of the surface area of the shape of the light source of the projection lens as viewed from the second region to the surface area of the shape of said light source as viewed from the first region.

10. The method of mask pattern correction of claim 8, wherein calculating the intensity of the light shone onto the second region is carried out based on an eclipsed shape of

an exit pupil of said projection lens blocked by the step-like part.

11. The method of mask pattern correction of claim 9, wherein the ratio of the surface area of the light source shape as viewed from the second region to the surface area of the light source shape as viewed from the first region is determined by the height of the step-like part and the distance from a vertical line dropped from the apex of the step-like part.

12. The method of mask pattern correction of claim 7, wherein when a substance that transmits the light is disposed on the substrate, the aperture angle is set using Snell's law and the refractive index of the substance.

13. A method of substrate topography correction comprising:

dividing a surface of a substrate onto which light that is focused at an aperture angle by a projection lens is shone into a first region onto which all of the light strikes and a second region onto which a portion of the light strikes;

calculating an intensity of the light shone onto the first region;

calculating an intensity of the light shone onto the second region;

calculating an exposure pattern to be transferred to the substrate based on the intensities of the light shone onto the first and second regions; and

correcting the topology of the substrate in such a manner as to reduce the amount of deviation of the exposure pattern from a desired design pattern.

14. The method of substrate topography correction of claim 13, wherein the second region is a region where the remaining portion of the light is blocked by a step-like part on said surface having a slope angle smaller than said aperture angle.

15. The method of substrate topography correction of claim 14, wherein when a mask pattern that is perpendicular to the step-like part is transferred to the substrate, the intensity of the light shone onto the second region is calculated based on the ratio of the surface area of the shape of the light source of the projection lens as viewed from the second region to the surface area of the shape of said light source as viewed from the first region.

16. The method of substrate topography correction of claim 15, wherein calculating the intensity of the light shone onto the second region is carried out based on an eclipsed shape of an exit pupil of said projection lens blocked by the

step-like part.

17. The method of substrate topography correction of claim 15, wherein the ratio of the surface area of the light source shape as viewed from the second region to the surface area of the light source shape as viewed from the first region is determined by the height of the step-like part and the distance from a vertical line dropped from the apex of the step-like part.

18. The method of substrate topography correction of claim 13, wherein when a substance that transmits the light is disposed on the substrate, the aperture angle is set using Snell's law and the refractive index of the substance.